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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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of 4

Complete if Known **Application Number** 09/720,524 Filing Date December 21, 2000 First Named Inventor Saverio Carl Falco et al. **Group Art Unit** Unknown Examiner Name Unknown Attorney Docket Number BB1167D US PCT

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Examiner Initials	er Cite the item (book, magazine journal, serial symposium, catalog etc.) data			
M		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: D89631, 07-30-97, SOHLBERG, L.E. ET AL., Nucleotide Sequence of a cDNA encoding a Cys proteinase from germinating bean cotyledons, XP-0021299910		
der		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: O49307, 06-01-98, FEDERSPIEL, N.A. ET AL., XP-002129911		
LW		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: D25000, 11-30-93, MINOBE, Y. ET AL., Rice cDNA from root, XP-002129912		
M		FRANK W. SMITH ET AL., PNAS, Vol. 92:9373-9377, 9/1995, Plant members of a family of sulfate transporters reveal functional subtypes, XP-002129913		
M		HIDEKI TAKAHASHI ET AL., Plant & Cell Phys., vol. 39 suppl, pp.S148, 1998, Antisense repression of sulfate transporter in transgenic Arabidopsis thaliana plants, XP-002121793		
M		HIDEKI TAKAHASHI ET AL., PNAS, vol. 94:11102-11197, 9/1997, Regulation of suffur assimilation in higher plants: A suffate trnasporter induced in suffate-starved roots plays a central role in Arabidopsis thallana		
M		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: X96761, 03-25-97, NG, A. ET AL., Isolation & characterization of a lowly expressed cDNA from the resurrection grass Sporobolus stapfianus with homology to eukaryote sulfate transporter proteins. XP-002121791		
lw	_	EMBL SEQUENCE LIBRARY DATA ACCESSION NO: AF016306, 01-08-1998, BOLCHI, A. ET AL., Coordinate modulation of maize sulfate permease and ATP sulfate permease and ATP sulfutylase mRNAs in response to variations in sulfur nutritional status: stereospecific down-regulation by L-cysteine, XP-002121790		
du		EMBL SEQUENCE DATA LIBRARY ACCESSION NO: 048889, 06-01-1998, BOLCHI, A. ET AL.		
M		FRANK W. SMITH ET AL., The Plant Journal, vol. 12(4):875-884, 1997, Regulation of expression of a cDNA from barley roots encoding a high affinity sulphate transporter, XP-002129909		
W		ANTJE PRIOR ET AL., Biochimica et Biophysica Acta, vol. 1430:25-38, 1999, Structural and kinetic properties of adenytyl sulfate reductase from Catharanthus roseus cell cultures		

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09/720,524

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	OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner - Initials *						
W		SENTA HEISS ET AL., Plant Mol. Biol., vol. 39:847-857, 1999, Cloning sulfur assimilation genes of Brassica juncea L.: cadmium differentially affects the expression of a putative low-affinity sulfate transporter and isoforms of ATP sulfurylase and APS reductase	-			
W		JOHN L. WRAY ET AL., Chemico-Biological Interactions, vol. 109:153-167, 1998, Redefining reductive sulfate assimilation in higher plants: a role for APS reductase, a new member of the thioredoxin superfamily?				
M		JULIE ANN BICK ET AL, Current Opinion in Plant Biology, 1998, pp. 240-244, Plant sulfur metabolism - the reduction of sulfate to sulfite				
lw		JULIE-ANN BICK ET AL., PNAS, vol. 95:8404-8409, 7/1998, Glutareodxin function for the carboxyl-terminal domain of the plant-type 5-adenytylsulfate reductase				
M	. •	JOSE F. GUTIERREZ-MARCOS ET AL., PNAS, vol. 93:13377-13382, 1996, Three members of a novel small gene-family from Arabidopsis thaliana able to complement funtionally an Escherichia coli mutant defective in PAPS reductase activity encode proteins with a thioredoxin-like domain and "APS reductase" activity				
M		AMIT SETYA ET AL., PNAS, vol. 93:13383-13388, 1996, Sulfate reduction in higher plants: Molecular evidence for a novel 5'-adenylylsulfate reductase				
du		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: C27405, 08-06-97, SASAKI, T. ET AL., Rice cDNA from callus, XP-002121812				
dw		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: AF071890, 06-29-98, MBEGUIE-A-MBEGUIE D. ET AL., Molecular cloning and partial nucleotide sequence of a sulfite reductase from apricot fruit, XP-002128211				
W		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: D50879, 12-01-97, IDEGUCHI, T. ET AL., cDNA cloning and functional expression of ferredoxin-dependent sulfite reductase from mlaze in E. coli cells, XP-002128212				
W		CHRISTINE BORK ET AL., Gene, vol. 212:147-153, 1998, isolation and characterization of a gene for assimiliatory sulfite reductase from Arabidopsis thaliana				

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Group Art Unit	Unknown			
Examiner Name	Unknown .			
Attorney Docket Number	BB1167D US PCT			

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Cite No.1		Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T*
dw		ANDREAS BRUHL ET AL., Biochimia et Biophysica Acta, vol. 1295:119-124, 1996, A cDNA clone from Arabidopsis thaliana encoding plastidic ferredoxin: sulfite reductase	
· dw		DATABASE WPI, DERWENT PUBL., LTD., JP-62 455773, MITSUBISHI CORP., 9/6/94, XP-002121814	
du		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: AU058082, 08/07/99, SASAKI, T. ET AL., Rice cDNA from callus, XP-002128630	
dw		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: AQ688702, 07/02/99, YU, Y. ET AL., A BAC Encd sequencing framework to sequence the rice genome, XP-002128631	
dw		SAITO, K., Stress Responses of Photosynthetic organisms, 1998, pgs. 215-226, Molecuair Aspects of Sulfur Assimilation and Acclimitation to Sulfur Supply in Plants	
M		KAZUKI SAITO ET AL., Plant Phys., vol. 106:887-895, 1994, Moedulation of Cystine Biosynthesis in Chloroplasts of Transgenic Tobacco Overexpressing Cystein Synthase [O-Acetylserine(thiol)-lyase]1	
dw		KAZUKI SAITO ET AL., Comptes Rendu De L'Academie Des Sciences, vol. 319:969-973, 1996, Molecular characterization of cysteine biosynthetic enzymes in plants	
dur		YOO, B. ET AL., Plant Phys. suppl., vol. 114:267, 1997, Regulation of recombinant soybean serine acetyltransferase by CDPK	
del	•	EMBL SEQUENCE LIBRARY DATA ACCESSION NO: p93544, 05-01-97, SAITO, K. ET AL., XP-002128628	
du		EMBL SEQUENCE LIBRARY DATA ACCESSION NO: C26373, 08-06-97, SASAKI, T. Rice cDNa from callus, XP-002128627	
LW		MICHAEL A. ROBERTS ET AL., Plant Molecular biology, vol. 30:1041-1049, 1996, Cloning and characterisation of an Arabidopsis thaliana cDNa clone encoding an organellar isotorm of serine acetyltransferase	-
ill		KAZUKI SAITO ET AL., Journ. of Biol. Chem., vol. 270(27):16321-16326, 1995, Molecular cloning and characterization of a Plant Serine acetyltransferase playing a regulatory role in cystein biosynthesis from watermelon	· ——

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First Named Inventor Saverio Carl Falco et al.

Group Art Unit Unknown

Examiner Name Unknown

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